USDA FOREST SERVICE–LONG-TIME LEADER IN FEDERAL FOREST PLANNING

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ABSTRACT

The USDA Forest Service has been a leader in the federal efforts at planning since the late 1800s. Before the Forest Service was established in 1905, there had been almost 30 years of data gathering at the international, national, and state scales, assistance to private forest owners, and advice given to other federal agencies. With the 1905 transfer of administration of the forest reserves (called national forests after 1907) from the USDI General Land Office to the USDA Forest Service, plans were devised for managing the 150 million acres of national forest system lands. Almost immediately, national policy was translated into grazing plans and applied to the western national forests (there were none in the East at that time). At the national forest level, grazing plans were written and enacted in the 1910s and 1920s. Acquisition of the eastern national forests began soon after passage of the Weeks Act of 1911. A National Forest Reservation Commission studied many areas in the East for possible inclusion in the National Forest System. With plans and agreements with affected states, lands were purchased with money appropriated by Congress and made into national forests. Other national policies on timber harvesting, water use, and recreation would be made into operational plans in the 1920s and 1930s.

Near the end of World War II, the Sustained Yield Act of 1944 set into motion a series of plans and agreements between the Forest Service, a few communities, and timber companies. After the end of the war, a great expansion of the Forest Service timber program necessitated the need for better timber/working circle plans. With controversy growing over the heavy reliance on timber production, the Multiple Use-Sustained Yield Act of 1960 tried to mandate a balance of resources into national forest management. The act also set into motion the production of resource specific plans for timber, recreation, grazing, mining, and many other resources. Many plans were made with often overlapping responsibilities and incompatible goals. Several national forests engaged in producing “unit plans” at the ranger district and sometimes national forest level with the intent of creating a single management plan for an area which accounted for all the primary resources. The passage of the Wilderness Act of 1964 set up another planning process (called RARE) to evaluate existing primitive and roadless areas for possible inclusion in the National Wilderness Preservation System. In 1974, the Resources Planning Act (RPA) set up a long-term analysis and evaluation process to collect and interpret data from across the U.S. and apply the results to managing the National Forest System. Multiple Use unit planning was still in effect by the late 1970s, when the National Forest Management Act of 1976 stopped this planning process and instituted a process for devising regional plans (guides) and national forest plans. At about the same time, a court decision on the RARE decisions restarted the roadless evaluation (called RARE II) process. This leads us to the present emphasis on the large-scale planning projects like the FEMAT, Sierra, ICBEMP, Southern Appalachian, and others.

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The USDA Forest Service has been a leader in federal forest land management planning for more than 100 years. The primary focus is on the 155 national forests that cover some 192 million acres of forests and grasslands. This paper discusses the ever changing Forest Service policies (as directed by Congress or from the Washington office) from the late 1800s to the present. Of course, the first requirement for federal forest planning is to have a land-base, then hiring the experts, followed by various national policies and regional guidelines, and finally the forest and land management plans.

ESTABLISHING A FEDERAL FOREST LAND-BASE

The federal government started in the forest land allocation business very early. The first federal reservation for timber purposes was in 1799 with establishment of several live oak reserves for the fledgling U.S. Navy. Such reservations were very small. Then in 1832, a small reservation was set aside from the public domain around Warm Springs in Georgia. In 1864, the Congress gave the State of California a select piece of land in Yosemite Valley for use as a public park (it was returned in 1906 to the federal government to be included in Yosemite National Park). The first national park was established in 1872 at Yellowstone. The first forest reserves (renamed as national forests in 1907) came into being in 1891. Both the President and the Congress agreed with these land withdrawals for public purposes. However, on-the-ground management of these areas would wait, in some cases for decades (Rothman 1989a & 1989b).

At the end of the 19th century, public concern over the loss of public domain timberland, as well as the removal of millions of acres of forests in the East and Great Lake States, led to passage of the Forest Reserve Act of 1891 and federal reservation of public domain forest lands that became the basis of the present national forest system (Dana 1956; Dana and Fairfax 1980; Steen 1976). Since that time, the Congress and the President have, incrementally, created a series of laws and Executive Orders to further the goal of federal forest management (the 1993 version of the book *The Principal Laws Relating to Forest Service Activities* contains 1,163 pages!). In addition, the land managing agencies have promulgated thousands of pages of regulations to implement the explicit and intended provisions of the acts.

Initially, there was little opposition to the creation of forest reserves (now called national forests), but with enforcement beginning in 1894 of the Trespass Act of 1831 against sheep, opposition mounted quickly from the grazing industry and western congressional delegations (Rowley 1985). Sheep and cattle grazing were occurring on a large scale and wide-spread in the Cascades, Sierra, and Rockies. Big grazing operators had huge investments that depended on public pastures/meadows during the summer months after the low-land feed was exhausted. After 1897, with publication of the Coville Report on damages caused by unrestricted grazing in the Cascade Range, limited sheep grazing was allowed on the forest reserves in Oregon and Washington (Rowley 1985; Williams 1992; Williams and Mark 1995). This was followed by relaxing the prohibition against grazing–but requiring limited management–in the forest reserves in the Rockies after 1900 (Rowley 1985). Scientific studies and reports of current or expected management would set the tone for future federal forest planning and management.

At the same time, there was growing controversy over the establishment of new forest reserves in the West. During the summer of 1896, the National Forest Commission, funded by Congress through the National Academy of Sciences, recommended about a dozen new or expanded forests. When President Cleveland designated 13 new forest reserves (21 million acres) on George Washington's birthday (Feb. 22, 1897), most of the western states and delegations to Congress rose in an uproar. After considerable argument, Congress passed the Organic Administration Act (as part of the Sundry Civil Expenses

Appropriation Act) for the forest reserves. Essentially, the act suspended the new reserves for nine months, except in California, and allowed organization of an administrative forest ranger force and survey work within the Department of the Interior. However, the forestry experts were in the USDA Division of Forestry–far from the day-to-day management activities of the forest reserves.

The law, in addition, set the primary goals for forest reserves in the future: "No national forest shall be established, except to improve and protect the forest within the boundaries, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States." A number of provisions in the act allowed the Secretary of the Interior (and after 1905 with the Secretary of Agriculture), and thus the management agency, to establish what the "proper" uses of the forest reserves would be. These reasons would continue to drive Forest Service planning and management for decades, including the present-day ecosystem management philosophy.

President Roosevelt and Gifford Pinchot teamed up to go around Congress when in March of 1907 Congress passed the annual Agricultural Bill. The bill passed the Congress on February 25th but the President had a week to sign the bill into law. During that time, the Forest Service and the President established some 16 million acres of new national forests in eight states. As President Roosevelt said: "The opponents of the Forest Service turned handsprings in their wrath, and dire were the threats against the Executive; but the threats could not be carried out, and were really only a tribute to the efficiency of our action (Pinchot 1947: 300)." The national forest system in the West was firmly established after this action. Since that time, national forests have been added mostly in the East, while those in the West often had name changes rather than new forest land.

The Weeks Act of 1911 came about after years of agitation by eastern members of Congress and the American Forestry Association. Starting as early as 1892, people suggested the need for forest reserves in the East, especially in New England and the southern Appalachian Mountains, to protect the watershed of rivers and streams important for irrigation and municipal use. Defeated for almost 20 years, Congress finally acted after the devastating 1910 fires in the northern Rockies. The Weeks Act allowed cooperation in fire fighting between federal and state forest fire protection agencies. Another major provision of the law was the creation of a National Forest Reservation Commission to recommend to Congress land which could/should be purchased from private citizens (willing sellers with approval from the affected counties and states) to create national forests in the East (Dana 1956; Dana and Fairfax 1980; Steen 1976).

EXPERTS AND MANAGEMENT

Pinchot, who gained forestry experience from his schooling in France and Germany, as well as his practical work at the Biltmore Estate near Asheville, NC, used that knowledge to lead the Forest Service into an early planning phase. He was able to hire the best and brightest college graduates in forestry and hired student assistants to stretch the thin budget, as well as to train and recruit young foresters. He found talented men like Alfred Potter to run the grazing program and Overton Price to run the administrative side of the Washington office. Other specialists would be brought into the fledgling agency when they were needed, which was soon. By the 1920s, men like Arthur Carhart and Aldo Leopold would be proposing innovative changes to the Forest Service in terms of recreation and wilderness management. The employment of Robert Marshall was especially needed by the early 1930s as the ideas of wilderness and outdoor recreation became real.

Reconnaissance (later called a timber stand exam) of the forests–mapping, uses of the area, grazing, settlements, trails & roads, soil conditions, burned over areas, insect & disease areas, standing timber volume and location, young growth, and tree species identification–was the first step in developing working plans–sometimes called silviculture or timber plans–for the national forests in the 1910s (Chapman 1915; Kirkland 1911 and 1915; Mason 1915; Moore 1915). Preston and Eldredge described the earliest efforts:

> During the period from 1908 to 1912 the Forest Service made enthusiastic and strenuous efforts to prepare and put into effect a number of management plans, or, as they were

> then called, “silvicultural working plans.” Experts were sent out to gather data and prepare plans for certain Forests. The plans when completed were usually most formidable documents, containing elaborate and detailed data, presented in many tables, graphs and diagrams, illustrated with may photographs, and often bound in large folios. As literary efforts these plans were monuments to their authors. The supervisors of the Forests concerned took these plans, looked them over, turned pale, and filed them reverently away. They are now to be found in storerooms covered with dust, and valuable only as lessons of the futility of making European plans for American forests not ready for them (Preston and Eldredge 1932a: 117).

Soon efforts to write simple, practical plans were started at a smaller scale. Only after base-line information was gathered could timber harvesting plans be worked out. The rangers often had similar experiences with doing this type of “recon” work under the Circular 21 examinations on private lands from 1898-1909. The concept of a “working circle” came into play around 1912. There were variations in the size of these working circles, depending on what part of the country they were in: “The actual size of working circles in the National Forests of the East varies from 12,000 acres to 100,000 acres, with an average between 20,000 and 40,000 acres. In the West the areas would be from 100,000 to 500,000, with an average between 150,000 and 250,000 acres (Preston and Eldredge 1923b: 586).” David Clary noted that in later years it became policy of the Forest Service to have the working circles refer to principle watersheds, both on and off the national forest (Clary 1986). By the 1970s, there were almost 400 working circles, each with their own timber management plan that was part assessment/inventory or the area and part management and restoration of the land to a future sustainable timber harvest (Fedkiw 1999).

The 1911 Forest Service Manual specified that plans would be developed for general administration, timber, grazing, permanent improvements, and for fire protection. By 1912, a document titled “Standard Outline for Forest Working Plans” was issued by the Washington office. It covered the requirements for plans noted above. In most cases, these plans were drawn up in the 1910s and 20s with what little data were available, with the hope that by keeping good records and gathering new data, better plans would be forthcoming in future years. It was noted that general policy direction was needed from Washington, then broad, regional plans could be drawn up, and the national forests could use the data to write and implement local plans. For the lands, improvements, and administration plans, they could be separate plans or part of the national forest plan (Moore 1915).

Municipal watersheds, which in some cases had led to the establishment of several forest reserves in the 1890s, were formalized in many cases into management plans during the 1910s and 1920s. Often management was specified in terms of what was *not* allowed in the watersheds, rather than what was allowed. In some cases, small dams and pipelines were constructed to divert clean, fresh water to the appropriate city. At other times, the watersheds were simply left alone, with the city draining water from the creeks and rivers downstream from the protected areas (Clary 1986; Fedkiw 1999). In certain cases (e.g. the Bull Run Watershed for the City of Portland, Oregon), the Forest Service working with the specified city allowed limited timber management (often after fires or “blowdown”) and road construction in the watershed, but these development plans tended to create controversy (Wilson 1974).

Recreation planning, especially focusing on campground locations and sanitation, became important, as the forest managers began to realize the impacts that forest visitors were having on popular areas. It was in the 1920s that the Forest Service hired a few of the new “breed” of landscape architects, including Arthur Carhart. After investigating several overused areas in the Southwest Region, he recommended that summer homes and other developments not be allowed at Trappers Lake on the White River National Forest in Colorado and that it should be set aside for primitive camping and experiences. He also surveyed the Superior National Forest in the Quetico-Superior lake region and recommended only limited development in 1921, becoming a strong advocate for wilderness recreation for that roadless area, that later became the Boundary Waters Canoe Area Wilderness (Williams 2000).

The Forest Service also “subdivided” (that is came up with new land allocations) several national forests into smaller units for special purposes. One important purpose was that of research natural areas (RNAs)

to protect the habitats of rare or unique plant and animal species, as well as habitat and forest types. In addition, the RNAs serve as a baseline to observe or document the effects of everyday management on nearby areas. Although first proposed as early as 1917 by the Ecological Society of America, the first Forest Service RNA (the Santa Catalina Natural Area) was in established in 1927 on the Coronado National Forest in Arizona (Fedkiw 1999). Usually, establishment of new RNAs of today have to be proposed by a national forest or researchers, an establishment report written, reviewed by the appropriate research teams and line/staff managers, then approved by either the regional forester and/or the Chief of the Forest Service. Plans for research activities or monitoring are usually specified in the establishment report or the forest plan. The usual or average RNA is a little over 1,000 acres.

During the early 1900s, timber harvesting was minimal, with only a few large timber sales let to the highest bidders. Almost all of these sales were for entire watersheds using logging railroad operations. These sales, some as large as 1 billion board feet (Lassen National Forest), were planned by the agency and were designed to last decades (Hurt and Jones 1930). Several of these large sales were touted as sustained yield forests in action (e.g. the North Fork Willamette River sale on the Willamette National Forest in Oregon).

THE GREAT DEPRESSION NATIONAL PLANS

With massive unemployment reaching 25 percent of the workforce by 1932 caused by the Great Depression, hundreds of thousands of willing, unemployed workers provided needed assistance with recreation and forest management infrastructure improvements/developments, as well as much needed help in fighting forest fires. The Forest Service was “ready” to use these workers on projects because of the *A National Plan for American Forestry* that was written in 1932-33 (Bob Marshall wrote the recreation portion). The two-volume, 1,677-page plan–referred to as the Copeland Report–“described and evaluated virtually all aspects of forestry, public and private. Timber, water, range, recreation, wildlife, research, state aid, and fire protection were only some of the topics included (Steen 1976: 202).” In one sense, the massive report predated the concept of multiple-use by almost 30 years. The Copeland Report, in part, outlined the needs for the federal land management agencies, which were then carried out by unemployed workers through the Civilian Conservation Corps (1933-1942),that operated on national and state forests, parks, monuments, wildlife refuges, and in many other locations across the country. The legacy these millions of CCC workers left can be observed across the country, especially by the thousands of federal and state parks and campgrounds, trails, roads, wooden buildings, bridges, and lookouts still standing (Otis et al. 1986; Salmond 1967; Sieker 1941; Tweed 1980).

At the same time, other federal efforts at large-scale planning were coming to fruition, especially the Tennessee Valley Authority and, on a somewhat smaller scale, the Columbia Basin (Washington) and Central Valley (California) projects. The Corps of Engineers was successful in building many flood control and irrigation dams, was well as levees and river straightening for navigation purposes. The Bureau of Reclamation during the 1930s continued to build smaller dams and irrigation canals to help farming operations throughout the country, especially in the arid West. Development plans for more huge flood control, diversion dams, and irrigation projects would come under increasing scrutiny during the 1950s and 1960s.

In the mid-west, a unique Depression era shelterbelt program came into being which relied on the extensive planning by the Forest Service, under the leadership of Paul Roberts, and the planting of millions of trees to protect private farm land from huge losses of topsoil necessary to maintain farming. In the eastern Great Plains from Canada to Texas shelterbelts were planted in strips at one-mile wide intervals to reduce wind driven soil erosion from the devastating droughts of the late twenties and early thirties. Tens of millions of trees were planted by Works Progress Administration (WPA) and CCC workers, then after 1942 by the Soil Conservation Service. This program constructed 18,000 miles of shelterbelts and protected more than 30,000 farms (Droze 1976; Steen 1976).

The Forest Service’s *The Western Range* (1936) report of some 600 pages was sent to Congress to review Forest Service grazing activities and programs that were affected by the Taylor Grazing Act of 1934. The act set up 142 million acres of grazing districts to be administered by the USDI Division of

Grazing (it became the Grazing Service in 1939) with local grazing advisory groups to chart policy and plans for the districts. *The Western Range* report was “unusually blunt for an official document, the report in no uncertain terms advocated that management of all federal ranges should be a Forest Service responsibility (Steen 1976: 207).” At issue was the new USDI Grazing Service and the management of the vast western, public domain rangelands. The report created additional “heartburn” between the two departments and agencies (the U.S. Grazing Service became the Bureau of Land Management in 1946) and became a rallying point for the new environmental groups, as well as efforts by the grazing and livestock associations to have the Forest Service moved into the USDI in the late 1940s and early 1950s.

During the early 1930s, Mason, Gifford Pinchot, Bob Marshall, and many others advocated strict federal control over logging on private lands. The result was Article X of the Lumber Code which became effective in 1934. Basically, the lumber code was designed to have strict regulatory controls over logging plans in the private sector. The lumber industry was favorable toward voluntary controls, but adamant against strong federal controls. Although the law was struck down by the Supreme Court after less than a year in operation, it resulted in closer cooperation by the timber industry and Forest Service (Steen 1976). Today, regulation by the federal government on private lands is minimal. However, many states have passed forest practice acts to establish "best management practices" and other regulations to protect water and natural resources on private land.

Around 1920, private forester David T. Mason began advocating long-term sustained yield operations on both private and federal forest lands. Mason "insisted that sustained yield offered the most practical way to deal with overproduction, industry's greatest problem (Steen 1976: 225)." Passage of the 1937 O&C Sustained Yield Act was the embodiment of Mason's philosophy of managing the Forest Service and Bureau of Land Management Oregon and California (O&C) forest lands in western Oregon for sustained yield. This was followed in 1944 by the Sustained-Yield Forest Management Act for Forest Service administered lands (Wolf 1993). However, there were no sustained yield units established under the O&C Act and only six under the Forest Service act. The basic reason for the “failure” of these acts was that it did not take long for the timber industry and the affected communities to realize that what was good for one company sawmill and town was bad for another. The laws became associated with anti-free enterprise, monopolies, and even communist-inspired social engineering. By 1950, the last Forest Service federal sustained-yield unit was established. The Tongass National Forest came into the equation in the late 1940s when there were long-term (50-year) contracts signed with several corporations to guarantee timber harvesting for five decades. These long-term contracts have come under increasing scrutiny in the last decade, with two of the contracts canceled (Fedkiw 1999; O’Toole 1990; Rakestraw 1981; Smith 1965). Yet today, the notion of sustained yield (and sustainable) management is a cornerstone of long-range planning and ecosystem management.

In late 1938, in the aftermath of the New England Hurricane of September 21st, the Forest Service was called in to assess the damage to a six-state area of the northeast, especially in the State of Maine. Plans were quickly drawn up to began a huge salvage and fire reduction operation. “By the spring of 1939 more than 14,000 laborers, mostly from WPA and CCC crews, had made remarkable progress in the fire hazard reduction program. There still remained, however, the task of salvaging the enormous amounts of down timber before it deteriorated (Robbins 1985: 150).”

PLANNING AND POLICIES AFTER WORLD WAR II

Planning for road construction and timber harvesting got a real start after World War II when the Forest Service was in the forefront of revising existing national forest working circle timber plans to account for the increasing demand for national forest timber. Historian David Clary described the scene in 1946:

> Planning was also important. The Washington office told the regions in April that “the objective at this time is to have approved management plans within the next 10 years for all working circles in which timber can be marketed...” [David T.] Mason assigned a new staff member to the “development of some new general instructions on management plan preparation.”...A lot of timber-management plans were revised during the first years after the war, all of which went to Washington for review. A large number increased the

> allowable-cut levels, often by considerable degrees. The reasons were manifold, including updated information on timber inventory or regeneration, improved harvest methods and equipment, increasing access to timber over greater areas, and, probably, the general administrative sentiment favoring the maximum potential contribution to the national timber economy. Not untypical was the new plan for the Coeur d'Alene National Forest, which proposed an allowable cut in white pine that was 300 to 400 percent higher than the levels set in 1939. Plans that did not calculate timber so as to permit the greatest annual allowable cut were returned to the Regions for revision. (Clary 1986: 122).

By the middle 1950s, there was a growing concern that in the ten years of rapid development of the national forests since the end of WW II the Forest Service was leaning so much toward management of timber that other resources were getting short shrift (Clary 1986; Kaufman, 1960; Le Master 1984; Steen 1976; Wolf 1993).

> The patterns of [timber harvest] increases each year was firmly established. Timber had always been a large and very important subject in the minds of foresters, particularly those in the Forest Service. But never before had the actual management of timber required so much time and energy and attention, to the point where the timber program itself (rather that its theoretical objectives) seemed to dominate the agency's consciousness and workday alike. Timber was such an active program by 1952 that any ambitious young forester could see that in the Forest Service, timber was where careers were to be made (Clary 1986: 125).

During the same period of the 1950s, planning became a standard of the ranger districts and national forests. Administrative historian Herb Kaufman, in his book *The Forest Ranger*, described the plans as he found them during his study (and that generally apply today):

> the Washington office requires every Ranger district to have a plan; there is none without a fire plan and a timber plan...Occasionally, a supervisor may insist that his Rangers prepare plans for functions not covered by [the two plans]....Sometimes only one or two districts in a region or a forest may be deemed by regional or forest officials to have a volume of business of a given type to warrant the formulation of an explicit plan...Some districts have as many as half a dozen or more (including, in addition to the mandatory timber and fire plans, land use, watershed, wildlife, recreation, grazing, transportation, planting, and others).
>
> Plans, at least as they are treated in the Forest Service, are preformed decisions. They set long-range (eighty to a hundred or more years for a function like timber management; five, ten, or twenty years for others) quantitative and qualitative goals, break these down into shorter-range objectives, and sometimes reduce these to annual targets. They spell out the steps and stages by which the goals are to be achieved, including the methods of operation, and priorities by geographical area, in each district...the format of the plans is normally suggested by guidebooks and handbooks, if not by the *[Forest Service] Manual* and its supplements and by individual instructions from higher headquarters. And staff assistants from forest headquarters commonly participate extensively in every phase of plan formulation–checking field work, reviewing calculations and estimates, offering and vetoing ideas (Kaufman 1960: 99-100).

PLANS AND PLANNING IN THE 1960s

The first inkling of a shift in management philosophy came with the congressional debates regarding the Multiple-Use Sustained-Yield Act (MUSY) of 1960. One important aspect of the MUSY act was the creation of multiple use planning, which brought in a number of new specialists such as soil scientists and wildlife biologists into land management decisions. Many rangers did their utmost to embody the principles of multiple use into their management of the national forests. For some, however, the act simply redefined what they were doing–that is building roads and creating clear-cuts. When the Forest Service began to manage for true multiple use, problems became evident as the agency tended to view multiple use as timber harvest everywhere (the so-called "dominant use") with only a few exceptions for other resources.

The MUSY set up the framework for multiple use planning (Grover and Maunder 1972). Regional guides were written to give broad, regional direction, but not specifics, while the ranger districts needed greater assistance in deciding about multiple uses (Fedkiw 1999). John Fedkiw outlined the dilemma:

> regional multiple-use planning guides...gave broad direction for establishing, planning, and managing zones for recreation, travel influence, water influence, landscape, grassland, general forest, and formally dedicated areas such as research natural areas and wilderness...Regional guides, however, did not give any direction on the use combination or pattern of uses that would best meet the public's needs....Multiple uses actually were coordinated incrementally on the ground through management decisions and practices within each land-use zone as the demand for uses emerged, site by site and year by year....district rangers prepared district multiple-use plans that classified their entire district into land-use zones. These plans were used to decide where management activities should take place. District plans did not withdraw CFL [commercial forest land] from timber production; rather, they directed the protection of landscapes, water quality, recreation, and other resources within the land-use zones. Timber planners were required to ensure that timber harvest plans would protect other designated zone values...In time, it became apparent that neither the functional resource plans of the 1960's provided any clear or uniform guidelines for coordinating multiple uses (Fedkiw 1999: 51).

The idea of multiple use planning provided many opportunities for the Forest Service to develop and update wildlife and fish habitat plans, many that had been worked out through informal agreements with state wildlife agencies (Grover and Maunder 1972). Thus, multiple use planning was a great opportunity for the national forests to gather new data, and undertake long-range planning for the district's natural resources, especially timber. The MUSY plans initially covered a single resource. Also, MUSY helped to introduce or formalize the idea of zoning the forests for single, then multiple uses (Wilkinson and Anderson 1985). After a decade of constructing single resource plans for the planning area, it became evident that not all resource plans were equal–the timber plan usually overruled the other resource plans. Many advocates saw that small areas set aside for different management (e.g. RNAs or wilderness) were just fine, as long as the areas were not too large to "infringe" on the CFL acres or reduce the timber harvest level.

In addition, on many ranger districts single resource plans were written to cover the whole district (forest in some cases). But which one was to take precedence in a given area–the timber plan or the scenic plan, the wildlife plan or the wilderness plan, the fisheries plan or the road system plan? "Conflicts were largely avoided or easily mitigated as long as the level of use remained relatively low compared to the national forests' capacity to absorb it. Where conflicts did occur, a multifunctional consultation approach was used to coordinate the uses (Fedkiw 1999: 30)." Several national forests began a process to devise unit plans that would incorporate the many single or functional resource plans into one overall multiple-use plan and thus allocate different land uses in the planning area without conflicting overlaps of priority resources. However, the public and interested parties were usually not included...they were informed of the decisions. By the late 1970s, these ideas and plans became the basis for the National Forest

Management Act which establishes multiple-use planning over large national forest areas, but mandates public involvement trough the act itself and the National Environmental Policy Act of 1969 (Fedkiw 1999).

Wilderness Act and Roadless Areas

In practice, it did not take long until "multiple *use* ran afoul of multiple *demands* (Clary 1986: 163)." This was especially evident in the wilderness debates in Congress during the late 1950s and early 1960s. Congress passed the Wilderness Act of 1964, although the Forest Service had been effectively managing administrative wildernesses since 1924 with the establishment of the first wilderness on the Gila National Forest (Le Master 1984). The Forest Service, with passage of the Wilderness Act, no longer had the authority to designate wildernesses on the national forests–that was reserved for Congress. This was the first of many environmental acts by which Congress usurped ("took away") Forest Service discretion at managing the national forests.

One of the outcomes of the Wilderness Act was the requirement to study possible roadless areas for inclusion as wilderness. This set up the roadless area review and evaluation (RARE) study. After great acrimony and dissent over the methods of identifying and evaluating the existing roadless and undeveloped areas over 5,000 acres in size–1,449 roadless areas containing 55.9 million acres–in an environmental impact statement (EIS), the case was taken before the courts which decided against the Forest Service in 1973 (the "Conti Decision"). The agency then restudied the areas (RARE II) and developed a new EIS in 1979. The results were still not what either the environmental community wanted, and most certainly not what the timber industry wanted. Discussions about the "release" language for those areas *not* chosen to be wilderness took months of very heated debate both in Congress and in the public arena. The log-jam was broken with the 1984 Oregon and Washington wilderness bills. In quick succession, many state wilderness bills became law. The states of Idaho and Montana, however, remain to this day as unable to agree to which areas should become wilderness and which ones not (Fedkiw 1999; Roth 1995).

There were major problems as well with timber harvest in areas not affected by roadless status. For at least a decade, the Forest Service in several regions did not remove the roadless areas from the timber cutting "base." In other words, the harvest level was the same as if all the roadless areas were available for harvest. But they were not. Since timber harvesting and road construction were not allowed in the official roadless areas, the timber came from areas that were available for these activities. Thus, areas that were available became heavily roaded and heavily cutover. When the wilderness bills were passed for most states, it meant that the timber harvest levels had to be adjusted downward. This complicated, for many national forests, the National Forest Management Act planning that was underway. In turn, this caused the timber industry, timber dependent communities, and counties to howl in protest.

National Grasslands, National Recreation Areas, and Wild & Scenic Rivers

The national grasslands were established by the Secretary of Agriculture in 1960. In the depths of the Great Depression, the federal government obtained title to several million acres of damaged farmlands and critical habitat in 45 states by voluntary sales. Management of the LU lands was transferred from the Soil Conservation Service (SCS) to the Forest Service in January of 1954. The original intent was that the Forest Service act as interim manager pending final disposal of these acquired lands. At the time, there were over 10 million acres of LU lands–most located in the Great Plains. Discussion over the future of these lands continued until 1958, when a revised policy transferred around 6 million acres to States and colleges. On June 20, 1960, some 3,804,000 acres were designated as 19 national grasslands as part of the national forest system. The Forest Service was now responsible for their permanent retention and management for outdoor recreation, range, timber, watershed, and wildlife and fish. In the late-1990s, management of the national grasslands in the Dakotas was given greater emphasis when they were given the same management treatment as the national forests–one supervisor's office in Bismark, North Dakota, to manage several grasslands.

The first of the National Recreation Areas (NRA) was established at Spruce Knob-Seneca Rocks on the Monongahela National Forest in West Virginia in 1965. A development plan was written for this unique

area that provided for a huge increase in recreation use and the construction of needed facilities, as well as some limited timber harvesting, grazing, and mineral development. Within three years, other NRAs were established: The Whiskeytown-Shasta-Trinity NRA on the Shasta-Trinity National Forest, the Mount Rogers NRA on the Jefferson National Forest, and the Flaming Gorge NRA on the Ashley National Forest. In 1968, the Congress passed the Wild and Scenic Rivers Act that designated eight rivers as wild or scenic, as well as specified that 27 other rivers or river segments be studied for possible inclusion under the act. Congress then passed the National Trails System Act of 1968 that established a system of national scenic, national recreational, and state and metropolitan trails. The Appalachian Trail and the Pacific Crest Trail were designed as national scenic trails in this act, with 14 other trails identified for possible inclusion in the system (Fedkiw 1999).

The revised Administrative Procedures Act of 1966 ushered in an era of citizens being able to question and litigate federal agency decisions. Although not generally used by citizens and groups until the 1970s, this act set up provisions that would become the basis for thousands of planning decisions that would be appealed to higher levels, as well as spawn numerous lawsuits on cases of national importance. This act was instrumental in giving access to decisions and process for the next three decades and became a wedge for special interest groups to question and challenge federal land management decisions, especially when this act was tied to the National Environmental Policy Act of 1969.

CONTROVERSY OVER FOREST MANAGEMENT PLANS IN THE 1970s

The decade of the 1970s saw a dramatic shift in the values of America. The National Environmental Policy Act of 1969, signed into law on January 1, 1970, was prophetic. This was followed on April 22, 1970, with the first Earth Day. A series of new Congressional acts were passed in the 1970s to further protect and enhance the environment, including the Federal Water Pollution Control Act of 1972 (which amended the Clean Water Act of 1948), Endangered Species Act of 1973, Freedom of Information Act of 1974, Forest and Rangeland Renewable Resources Planning Act of 1974, National Forest Management Act of 1976, Clean Air Act of 1977 (which amended the Clean Air Act of 1955). These laws and others have been at the root of numerous administrative appeals and lawsuits, many of which have successfully challenged and changed how the federal agencies would interpret the laws, implementing regulations, build plans, and management of the federal lands (LeMaster 1984).

At the beginning of the 1970s, controversy raged over wilderness, roadless areas, herbicide use, and clearcutting. While all of these controversies have relevance for today, the clearcutting debate in the Forest Service had the most direct effect of the issues facing the federal agencies. In the late 1960s, the Bitterroot National Forest in Montana, in a burst of timber harvesting in response to the national needs for wood, began clearcutting and terracing the cut-over slopes for better regeneration of seedlings (Bolle 1989). Another clearcutting controversy, this time in the East on the Monongahela National Forest in West Virginia, contributed significantly to the management debate. In 1972, the federal District Court ruled against the Forest Service. After the Fourth Circuit Court of Appeals also ruled against the agency in August, 1975, the Forest Service and Congress decided that something had to be done to change the old Organic Act of 1897 to allow timber harvesting (Boerner 1986; Clary 1986; Fedkiw 1999; Le Master 1984; Peterson 1989; Wolf 1993). The result of these two battles, and others, was a series of congressional hearings over clearcutting in 1971-72. These controversies led to the writing of the National Forest Management Act (NFMA) of 1976 with the strong requirements for forest planning.

Resources Planning Act of 1974

The Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 required, for the first time, that national level planning and budget preparation be linked with the multiple use plans. Basically, the RPA required the Forest Service to undertake an extensive planning process to detail the many needs and uses of the national forests. The act provided that beginning in 1976, the Forest Service would 1) develop an assessment every ten years describing the nation's forests and grasslands resources, 2) every five years a program (today referred to as the "Strategic Plan") that outlined the proposed expected national forest production of various resources, and 3) submit an annual report comparing the outcomes with the program (Wilkinson and Anderson 1985). With the RPA program in hand, the Forest Service

could–theoretically–go to Congress to obtain the necessary money to implement the program. RPA represented Congress's first legislative recognition that management of our natural resources could only occur with long-range planning and funding—not planning and funding on a year-to-year basis. The RPA was described by historian David Clary as "the answer to a bureaucrat's prayer...which authorized the endless generation of paperwork (Clary 1986:189)."

National Forest Management Act of 1976

Because of the law suits and congressional hearing in the early 1970s, there was considerable debate in Congress about how much latitude the agency should have in any new act to address the inadequacy of the Organic Act of 1897. Arguments ranged from a very open law that would give Forest Service managers great flexibility in management by just fixing the wording of the Organic Act regarding timber harvest, while others in Congress and from special interest groups wanted little flexibility by providing very tight, prescriptive controls over all aspects of management. Others, notably Forest Service professionals, wanted something in-between. Former Chief R. Max Peterson noted that:

> it became obvious to most that neither Congress nor anyone else could possibly write management prescriptions that would fit the many physical situations on National Forests....This led to a recognition that the legislation would have to set forth a process rather than specify answers (Peterson 1989: 31).

The result of several years of hearings and negotiations was the National Forest Management Act (NFMA) that was signed into law on October 22, 1976. The new NFMA act amended the RPA act of 1974. Although it was national in scope, the NFMA addressed planning issues and processes at the field/forest level. A similar act was passed and signed into law for the USDI Bureau of Land Management (Clary 1986; Fedkiw 1999; Le Master 1984). NFMA requirements mandated public involvement in the planning process, redefinition of sustained and non-declining yield, and clearcutting (which the act defines as an acceptable practice). Another requirement was to "preserve and enhance the diversity of plant and animal communities...so that it is at least as great as that which would be expected in a natural forest." One provision in the NFMA gave official National Forest System status in law–as many of the original national forests in the 1891 to 1907 era were simply established by a series of Presidential proclamations. NFMA provided strong wording on the development of forest plans in 16 U.S.C. 1604(e), section 6(e)(1):

> In developing, maintaining, and revising plans of the National Forest System...the secretary [of Agriculture] shall assure that such plans...provide for multiple use and sustained yield of the products and services obtained therefrom in accordance with the Multiple Use-Sustained Yield Act of 1960, and in particular, include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness.

Another of the provisions of NFMA was the requirement to develop the regulations to implement the act: "the Secretary was required to appoint a committee of scientists who were not officers or employees of the Forest Service to provide scientific advice and counsel...[to implement the intent of the law] (Peterson 1989: 32)." The implementing regulations took almost three years to become final, before NFMA planning could really begin on the national forests. The new regulations required a long-range planning process to be carried out by a team of interdisciplinary specialists. Regional guides for each Forest Service region were written to help guide the planning efforts at the national forest level. New employees were hired in many disciplines new to the Forest Service. Numerous training sessions were given to the teams. New requirements from the Washington office regarding computer programs were put into effect, especially that of FORPLAN and then IMPLAN (Iverson and Alston 1986). New resource inventories were contracted or old ones updated. New land use allocations were discussed internally and applied in the forest plans. Each NFMA plan resulted in every national forest having a map and land use allocations that are compatible with the others, do not overlap on the same areas, and have had extensive internal and external review. By the end of the 1980s, 123 NFMA plans had been released in draft or final form (Ellis and Force 1988; Fedkiw 1999).

However, the completed NFMA forest plans were not greeted with great fanfare or relief from the old battles over resources, especially timber supply. Instead, public disputes escalated into public and private name calling, intimidations and threats against employees and special interest groups, countless appeals, tree-sitting, tree spiking, demonstrations, sit-ins, log-truck rallies, speeches, lawsuits, court decisions, congressional hearings, and legislation. These conflicts have many implications for how the agencies will manage the national forests and districts in the future. Probably one of the most publically debated plan was the Tongass National Forest plan, which still ripples through Congress today (O'Toole 1990).

The agency tried to integrate the science of forestry, range management, and other resource disciplines, along with public desires, into these comprehensive plans (Fedkiw 1999). In doing so, they had to ignore a number of "thorny" resource issues that were outside their control. These issues which have carried over to the 1990s have, in most cases, been handled outside the NFMA planning process: Spotted owls, marbled murrelets, salmon, grizzlies, wolves, cougars, caribou, roadless areas, old growth or ancient forest, Pacific yew, clearcutting, monoculture, air quality, international impacts, herbicide use, and so on. Some of these remain issues today.

President Jimmy Carter on December 1, 1978, during the congressional fights over the disposition of the BLM administered lands in Alaska following the Alaska Native Claims Settlement Act of 1971, established 17 new national monuments–totalling 55,975,000 acres–and 38,930,000 acres of national wildlife refuges (Rakestraw 1981). The Forest Service, for the first time since 1933 when all the national monuments were transferred to the Park Service, gained a new national monument on Admiralty Island and another at Misty Fiords, both on the Tongass National Forest (Zaslowsky and the Wilderness Society 1986). Most of the BLM national monuments in Alaska were transformed into national parks and/or national preserves in 1980 (Rothman 1989a and 1989b; Williams 2001).

CHANGING PARADIGMS OF THE 1990s

On March 24, 1989, Chief Dale Robertson commissioned a critique of the previous ten years of planning under the NFMA. In his announcement, he said that "now that the Forest Service has been developing Land and Resources Management Plans for ten years, it is time that we step back and look at what has been accomplished." The eleven volume critique (Larsen and Shands 1990) on May 2, 1990, made seven major recommendations to the Forest Service's Chief and Staff for changing the agency's four management activities–planning, organizing, implementing, and controlling:

1) Simplify, clarify, and shorten the planning process (planning).
2) Insure high quality planning and plans (planning).
3) improve the organizational and administrative infrastructure for planning (organizing).
4) Strengthen and clarify the ties between forest plans and programming, budgeting, and appropriation activities (organizing).
5) Define, clarify, and explain the RPA, NFMA, and NEPA processes, and explain how they fit with the agency's framework for multi-level planning, decision-making, and management (implementing).
6) Develop a comprehensive strategy and clearly assign responsibilities for implementation and maintenance of forest plans (implementing).
7) Refurbish the mechanisms for quality control, management review, and forest plan monitoring (controlling).

However, implementation of the recommended changes to the Forest Service would have to wait, as new concepts for land management/environmental planning came to the forefront of discussion: New forestry and new perspectives. Jerry Franklin, formerly with the Forest Service, and Chris Maser, formerly with the Bureau of Land Management, are often considered as gurus of a "new forestry" approach to forest management (Brown 1990). The findings of decades of important scientific forest research have provided much needed clues to the long-term health and productivity of the coniferous forests of the northwest. They led the Forest Service into new forestry as a search for alternative ways to manage the federal forests. Interestingly, this push for change has come from inside the agencies, rather than from external

pressure from interest groups or Congress. Also, it was expected that new forestry would be able to effectively address the NFMA planning requirements for biological diversity found in FR 291.26 and FR 219.27g.

Although some felt that new forestry was nothing more than "old forestry" as it should have been applied, most believe there are many elements that were not in the mainstream of forest management techniques or philosophy. A revolution in management practices was taking place based on research from within the agencies (Drushka 1990). Loggers from the industry side tended to refer to these sites as “dirty forestry.” This derogatory term reflected their training from forestry schools and long-time experiences of clear-cut areas, broadcast burn the sites, then replant with genetically superior trees.

In the summer of 1990, the Forest Service embraced a new concept called “new perspectives” as a top-down idea which would be complementary to the new forestry bottom-up idea. New perspectives was an attempt to upgrade the 1960s multiple-use term for the 1990s. New perspectives quickly became a new goal for the national forests which was more philosophical and addressed the larger societal questions and values surrounding the management of the national forests (Fedkiw 1999; Shands, Black, and Giltmier 1993).

Ecosystem Management

New forestry and new perspectives were replaced in 1992 with the more comprehensive term "ecosystem management" (Robertson 1992). The Forest Service, Bureau of Land Management, Fish and Wildlife Service, National Park Service, and other land management and regulatory federal agencies are embracing ecosystem management as a new paradigm for management in the 1990s and into the next century. Ecosystem management has been closely associated with issues related to roadless areas, old-growth (ancient) forests, and the spotted owls (Scientific Analysis Team 1993).

In the early part of President Clinton’s term, he called a special meeting to address the issues relating to spotted owls, timber supply, employment, and ecosystem management in the Pacific Northwest. On April 2, 1993, a Forest Conference (or "Timber Summit") was held in Portland. This unprecedented conference on forestry issues was attended by President Clinton, Vice-President Al Gore, and five cabinet members, as well as scores of scientists, managers, and concerned citizens. The Forest Ecosystem Management Assessment Team (FEMAT), led by Forest Service researcher Jack Ward Thomas, was given the task of organizing an interagency team of scientists to analyze the best scientific evidence and report on the best solutions to the federal forest problems (basically old growth and spotted owls) in western Washington, western Oregon, and northwestern California. The team was given a very short time-frame (April to July) for this process. A massive FEMAT report (1,015 pages) was issued in July 1993, which was followed by a Supplemental Environmental Impact Statement (SEIS) to implement the requirements and suggestions from the FEMAT report. Several months after publication of the FEMAT report, Thomas was appointed as Chief of the Forest Service. One of his primary goals as Chief was to implement ecosystem management not only in the Pacific Northwest but also across the agency administered lands.

Soon after the FEMAT process was completed, another even more ambitious assessment and multi-forest plan started. It is the Interior Columbia Basin Ecosystem Management Project (ICBEMP) for the national forests and BLM districts in eastern Washington and Oregon, Idaho, and western Montana. ICBEMP is the largest such project that has been undertaken by the Forest Service and the BLM. It is designed to assess all of the natural resources in the basin, plot their long-term trends, consider the impacts on resources and people, and devise a long-term plan for the area. The assessment part of ICBEMP is not restricted to just the federal lands, although the plan only applies to national forest and BLM lands. A draft EIS was published in 1998, and after much debate in the public sector and Congress, the final EIS should be printed sometime in late 2000 or early 2001.

Another three large-scale ecosystem assessments–without the plan or action portions–occurred in the mid- to late-1990s. The Southern Appalachian Assessment in 1996, the Sierra Nevada Ecosystem Project (SNEP) also in 1996, and the Ozark-Ouachita Highlands Assessment in 1999 were published, but

they did not have the same “fanfare” as the FEMAT or ICBEMP processes have had. This is most likely because the assessments were separate from the plans for the same areas.

Implementing an ecosystem approach to land and resource management also implies that we have to break with another tradition–staying within the artificial political boundaries of national forests, districts, counties, states, and even nations. The advantage of implementing this new approach to forest and rangeland management appears to far outweigh the probabilities of severe conflict in the future that will be "handled" by the courts and Congress (Cohn 1992).

The recent (1999-2000) nation-wide planning process set-up for the roads and roadless areas is one of a trend by the Forest Service to attempt to “answer” national issues at the national scale. The final roadless EIS was just released to the public on November 13, 2000. The wilderness regulations of the mid-1960s, the RARE and RARE II, the FS-BLM interchange, the gypsy moth, and other national-scale EISs have been completed over the past 30 years. Extensive controversies have erupted over the wilderness and roadless EISs, while the others have been relatively quiet.

Collaborative Decision-Making

During the late 1990s and early 2000, there have been significant shifts in direction of the agency. Probably the most dramatic has been that of involving the public in management decisions. The most notable change is that of collaborative management. The goal of collaborative decision-making has been reinforced by the 2nd Committee of Scientists, who have reported on necessary changes to implement the revised NFMA regulations (Daniels et al. 1996; Johnson 1999; Selin 1997; Slover 1996). The revised NFMA regulations, that were published in final form on November 9, 2000, place considerable emphasis on the need for collaboration in agency decisions.

Yet to some in the Forest Service, as well as some national special interest groups, the notion of collaboration in decisions “flies in the face” of agency tradition. There are agency people who believe that collaboration is abrogating decades of decision-making where the agency personnel make decisions for the public good, regardless of impact/effects on local communities. Also, national interest groups feel that decisions made at the ranger district and national forest level through collaborative planning disregards or ignores the role of people and groups that represent the national agenda of their organization, and thus, the will of the people, especially those from urban areas. Even when members of national interest groups may take part in collaborative efforts, at least some of the interest groups leaders feel that the local members often give up important national issues in order to resolve local issues. The Quincy Library Group in California is a good example of such opposition from local vs. national leadership in the environmental community (Margolis 1997; Marston 1997; Rasmussen 1997).

CONCLUSION

Planning for the USDA Forest Service began more than a century ago. The first step was the establishment of the forest reserves beginning in 1891. These actions allowed future land managers to have a land base from which to apply the concepts and process of long-term planning on the national forests. Without the national forests, the Forest Service would have never existed. Planning efforts started as assistance provided free of charge to the private sector, then the process was applied to the national forests soon after the turn of the 20th century. Requirements for working plans (mostly timber and grazing) began in the 1910s. The plans started to expand into studying other resources by the 1920s and 1930s (especially recreation).

After the end of World War II, there was a great need to undertake long-range plans for development of the national forests through road construction and timber management. By the late 1950s, there was a public concern over too much emphasis being placed on timber management. The Multiple-Use Sustained-Yield Act of 1960 tried to remedy the over emphasis of timber by ensuring that recreation, wildlife, water, and grazing would have equal consideration in forest plans. Single resource plans then unit plans attempted to put multiple use into practice. The wilderness act and the roadless areas reviews

(RARE and RARE II) put the agency into the start of a decade long planning process that was filled with acrimony and frustration by both the public and the Forest Service employees.

After controversy over clearcutting on the Monongahela and Bitterroot National Forests, the Congress took actions to replace the restrictive timber harvesting provisions of the 1897 Organic Act. The result was the National Forest Management Act of 1976. Planning rules and regulations were set by a group of outside researchers and scientists (the Committee of Scientists). By the end of the 1980s, despite years of going through a planning process that was constantly changing in interpretation, 123 national forest plans had been printed.

In 1992, another emphasis of forest management was put forth–that of ecosystem management. Elements of that became embodied into the 1993 FEMAT process, as well as that of the related, but separate ICBEMP, SNEP, Ozark-Ouachita Highlands, and Southern Appalachian Assessments. Today, planning is proceeding once again into an unknown arena–that of collaborative stewardship. It is unclear how collaborative planning will hold up in the courts, especially when national special interest groups argue that they have been left out of the process.

It will be interesting to observe what affect the 2000 election will have on the new NFMA implementing regulations, as well as the EISs for roadless areas, roads, and ICBEMP. As usual, despite Pinchot's admonition that foresters should stay out of politics, the practice of forestry and the management of the national forests always has been and will always remain political.

Table 1: Highlights of the History of Land Allocations on National Forests.

1891	Forest Reserves established from public domain (all in the West), but no management.
1897	Organic Act–management allowed by USGS (mapping) & GLO (now BLM) forest rangers.
1905	Transfer of management from GLO & USGS to Forest Service.
1906	Antiquities Act–first of many national monuments established.
1907	Many more National Forests created in West. Gifford Pinchot and Teddy Roosevelt were leaders in the early conservation movement.
1910s	Grazing districts created (most became ranger districts circa 1915).
1911	Weeks Act allowed purchase of forest areas (most denuded) in the East to protect water supplies. Also allowed cooperative efforts for fire control.
1912	Idea of "Working Circles" came into being.
1915	Summer home tracts are encouraged on the national forests.
1920s	First large timber sales in the West (whole watersheds) are designed to take decades to log.
1920s	A few campgrounds and roads were built for increasing public use via automobiles. Scenery (and screening) became important.
1924	First wilderness established (Gila Wilderness on Gila National Forest).
1930s	CCC builds thousands of recreation sites, ranger stations, and lookouts.
1938-9	Roadless area reviews (>200,000 acres) for wilderness and primitive area status. The review was led by Bob Marshall from the Forest Service, first director of recreation in the Washington office. Many wildernesses and primitive areas were established.
1944	Sustained Yield Forest Management Act–only 1 cooperative timber unit (Shelton, WA) and 5 federal units were established.
1945-60	Rush to build roads and push timber sales to met public demand for lumber.
1960	Multiple-Use Sustained-Yield Act (MUSY)–meant to equalize the emphasis of all resources, not just timber. The act set up planning efforts for single resource use (timber plans, recreation plans, grazing plans, and so forth). Also, the Secretary of Agriculture established a new category of lands in the national forest system: National Grasslands.
1964	Wilderness Act combines FS wildernesses into a National Wilderness Preservation System. The act sets up a process for evaluating additional, smaller roadless areas for wildernesses (RARE). After problems with first analysis, RARE II sought to rectify.
1968-70	Clearcutting on the Monongahela and Bitterroot National Forests led to court challenges (and losses by FS). In turn, these led to the National Forest Management Act (NFMA) of 1976–an elaborate, process-oriented effort. The newly designed planning process took the MUSY single resource plans and combined them with new management goals/alternatives, which resulted (ten years later) in forest plans. Big time "zoning" (land use allocations & management prescriptions) in the NFMA plans.
1992	Forest Service management applies the concept of ecosystem management to the agency.
1993	President Clinton led a “Forest Conference” in Portland, Oregon, to address spotted owl and old-growth forest concerns, as well as timber supply issues. Result was the Forest Ecosystem Management Team (FEMAT) report and EIS which set the direction for managing the national forests and BLM lands in western Washington and Oregon, and northwestern California. Many new land allocations were created during the process. Similar assessment processes were established for the Sierra and southern Appalachian forests.
1993-2000	Huge assessment and management process was established for the interior Columbia River basin for the Forest Service and the BLM. Final outcome of the Interior Columbia Basin Ecosystem Management Project (ICBEMP) has not been decided. Other large-scale assessments have been undertaken, including the Sierra, Southern Appalachian, and Ozark-Ouachita ecosystem assessments.

APPENDIX A

Practical Forest Management and Planning Began by Helping the Private Sector

The USDA Division (later Bureau) of Forestry assisted many private land owners and took this experience and applied it to the national forests soon after the Forest Service was established in 1905. It did not take long for the forest supervisors and district rangers to realize that there were issues and concerns about particular aspects of management that needed firm direction. Gifford Pinchot, who had been the secretary of the 1896 National Forest Commission, was appointed in 1898 as head of the USDA Division of Forestry. He had several objectives in this position: "(1) to get forestry (always referred to as "practical" forestry) actually practiced in the woods, particularly on private lands, and (2) to get the administration of the forest reserves transferred from the Department of the Interior to the Department of Agriculture (Dana 1956: 120)." The first objective was, in part, accomplished through publication of a number of books and pamphlets designed to assist private lands owners with the management of their forest lands. The second object would have to wait another seven years. For the first objective, the Division of Forestry printed Circular 21 with the title "Practical Assistance to Farmers, Lumberman, and Others in Handling Forest Lands" in late 1898 and it was circulated far and wide. Historian Samuel Dana described the success of the first government sponsored forest (mostly tree harvesting) planning efforts through Circular 21:

> It offered to advise private owners on the management of their forest lands, with the government paying the salaries of the examining officers and the owners most of their expenses, and also to prepare complete working plans for the management of large tracts of timberlands, with all costs usually paid by the owner. During the first year applications for assistance were received from123 owners of 1,500,000 acres in thirty-five states...By 1903 applications has been received for assistance in the management of lands totaling 5,656,171 acres, of which 15,592 acres were in farm wood lots and the remainder in larger tracts. Three years later these figures had doubled. Several elaborate working plans were prepared for tracts of considerable size in many parts of the Eastern United States [including one for West Point]. A few of these plans were published as government bulletins [e.g. Circular 30 in 1901] as a means of arousing interest in other owners and of indicating the requirements and promises of "practical forestry" (Dana 1956: 120).

Pinchot noted the elements of a successful working plan in 1900 in the annual report of the Chief of the Division of Forestry:

> A thorough examination of the tract is made from the forester's and from the lumberman's points of view. Sample acres are selected through the forest, generally in successive strips, and the stand of merchantable and immature trees upon them is counted and measured. From these measurements is calculated the stand on the whole tract. The rate of growth is determined from stem analysis of sample trees. Studies are made of reproduction, of the danger from fire, from grazing, and from insect attack, and of the best means of preventing such injuries. Market and transportation facilities are carefully investigated, and a map showing the character and distribution of the forest and the stand of timber is prepared. When the needed data have been collected they are worked up into the plan, which takes into account the special needs or purpose of the owner, as, for instance, to secure permanent supplies of mining timbers, to maintain a game preserve, or to protect a watershed. The recommendations embraced in the plan enable him to derive from the forest the fullest and most permanent revenue which is consistent with his special requirements (as quoted in Wilkinson and Anderson 1985: 20).

To meet the demands in 1899 Pinchot added a Section of Working Plans under the direction of Henry Graves (Wilkinson & Anderson 1985). By 1905, the Forest Service reported that nearly 11 million acres of private lands had been studied. Of that total, 1.7 million acres belonged to one company–Kirby Lumber Company of Texas. "The program ended in 1909, however, under some questioning about the

expenditure of public resources for private gain and in the face of the less-than-unanimous interest of the industry (Clary 1986: 20)."

Along with Circular 21, Pinchot and the Division of Forestry in 1899 printed Circular 22 "Practical Assistance to Tree Planters" that was designed to help farmers plant trees for future forests. "Planting plans would be prepared by the Division without charge for tracts fewer than 5 acres, and at a charge covering actual expenses only for larger tracts (Dana 1956: 121)." Three years later, only 262 applications had been received under the new program, almost 198,000 acres had been examined by the Division, but plans for tree planting were prepared on less than 6,500 acres. It was not a very encouraging set of facts for the future forests on private lands.

The small staff of the USDA Division of Forestry (it became the Bureau of Forestry in 1901) was heavily worked. Not only was the demands growing from the private sector, they were growing from the agency that was managing the forest reserves–the Department of the Interior. The reason was that, for the most part, the USDA under Pinchot had the most accomplished and trained foresters, while the USDI had the management responsibility, without the trained staff, of the reserves. Thus, the Interior managers were constantly requesting advice from Pinchot and his staff of experts. "Pinchot repeatedly mentioned the Interior Department's demands upon his staff for the preparation of 'working plans' similar to those drafted for private owners (Robbins 1985: 15)."

APPENDIX B

Working Plans for the National Forests in the Early Days

The forest reserves management was transferred from the USDI to the USDA in 1905, where management remains today. Also in that same year, President Roosevelt approved the renaming of the Bureau of Forestry to the Forest Service, with Gifford Pinchot as the first Chief Forester. Pinchot, who in the early 1890s developed a forest plan for the Biltmore Forest near Asheville, North Carolina, set up a number of planning needs for the national forests, as explained in the 1905 *Use Book*:

> It is the policy of the Forest Service to conduct within forest reserves useful work and investigations outside the ordinary work of the reserve, such as the examination of lands proposed to be excluded from or taken into a reserve, the study of commercial trees, the preparation of **maps and working plans** for conservative lumbering, and the establishment of nurseries and planting of trees. Such work will usually be done by or under the supervision of forest inspectors, but the local force will assist and cooperate with them as far as possible without interference with their regular duties....Forest assistants may be assigned to any part of the United States, and must be competent to handle technical lines of work, such as the preparation of **working plans and planting plans**... (USDA Forest Service 1905: 73, 87 emphasis added).

Grazing was the major management issue in the early days and the first grazing plans were written in the 1910s to cover grazing allotments within the national forests. Working circles plans, designed for sustained forest management, also came along by the late 1910s. Special unit plans, such as recreational campgrounds, summer homes, municipal watersheds, wilderness, and research natural areas, were designed in the 1920s. From about 1900 until at least 1920, grazing as the main management concern on the national forests. At the time, millions of animals, mostly sheep, were grazing the meadows on the national forests in the West. Timber harvesting as we think of it today was mostly a dream. Grazing studies, which were the basis for setting up grazing plans, were designed to investigate grazing permit use and identify any problems on the ground, as well as identify opportunities for better range management. Many of the grazing districts and working circles became ranger districts by the 1920s.

Gifford Pinchot noted in his autobiography *Breaking New Ground* that in the summer of 1899, the acting commissioner of the USDI General Land Office wrote to the Secretary of the Interior recommending that "'the said Division of Forestry be requested to favor this office with comprehensive reports upon expert investigations of all related [forest] questions; which shall extend to including a suggested working plan for the harvesting of timber in each of the existing reserves' (Pinchot 1947: 172)." The first such plan was worked out on the Black Hills Forest Reserve in South Dakota. The area was studied in the summer of 1900 with a draft plan ready soon thereafter (Pinchot 1947).

In addition, Pinchot outlined his practical forestry working plans in the small book with the title *A Primer of Forestry: Part II-Practical Forestry* (1905). In the book he wrote about the elements of a good working plan for any forest (private or federal), the basis of which are still with us today:

> A Forest working plan is intended to give all the information needed to decide upon and carry out the best business policy in handling and perpetuating a forest. It gives this information in the form of a written statement, which...shows the present stand and condition of the forest, and gives rules for the selection and marking of trees during the logging. The working plan also predicts the future yield of the forest, basing its prediction on careful measurements which show how many standing trees of different diameters will be left per acre after the first cutting, and how fast these trees will grow. Finally, it estimates the future return in money, taking into account taxes, interest, and other expenses on one side, and the future crop on the other (Pinchot 1905: 41-42).

However, working plans were not always practical in the early days. It wasn't until late 1918 that timber planning was brought to the forefront of Forest Service management:

> [E.E.] Carter's [WO's longtime Chief of Timber Management] circular letter (S-Supervision, Forest Regulation) of December 6, 1918, in which he brought [timber] regulation into the foreground, requested a report upon the status of the plans of regulation in the several Districts [Regions today], and stimulated the preparation of simple, sensible plans where actually needed, is a landmark in the development of American forestry practice because it initiates the era of "working plans that work." The artificial stimuli previously applied by the Forester's office [Washington office] in attempting to secure results in this line of work from District officers and [Forest] Supervisors...resulted in a few rather weird and unreal documents that usually had no bearing upon the...problems of timber administration. A District Forester...stated in a letter to a contemporary "the preparation of a detailed Silvicultural working plan is more of an exercise of the imagination than a beneficial administrative activity." Between 1911 and 1918 [only] six plans of this type had been prepared in this District [California Region]...
>
> The job of preparing these plans [after 1918] was assigned to [National] Forests. Assistance has been given by the men in the District Office of Forest Management in outlining the general plan of attack and by giving advice regarding problems that arose during the course of the work. The Research organization has furnished data...and has helpfully reviewed the finished plans. The simplest methods have been employed (Woodbury 1929: 1).

By the 1920, working plans had changed slightly to account for "other resources." Coconino National Forest in the middle 1920s, revised an earlier management plan for timber harvesting. In the new plan, the Forest Service began to specify additional needs, as explained by historian David Clary:

> Most remarkable in the new plan [in October of 1927] was the occasional subordination of timber to other resource values. "In order to protect the scenic values along roads the marking within one to five chains on either side of the road will be confined to a light selection, removing not to exceed 50% of the volume of insect infested, disease, or overmature trees." Although that might appear to be only a grudging and incomplete accommodation of esthetic values, certain small zones obtained complete protection: "On limited areas of high value for recreation, timber production will be subordinated to recreation on which no cutting will be done" (Clary 1985: 82).

In those days, timber management plans, as described in the 1928 Annual Report of the Chief, were designed to:

> give definite answers to such questions as what shall be the area unit from which a "continuous supply of timber" is to be obtained; how much timber can be cut from that area annually or by decades and still have the growth on the whole unit replace the amount cut; what conditions must govern the cutting in order to obtain the best crops of timber for future cutting; what bodies of overripe or deteriorating timber need cutting promptly, how the greatest aid can be given to local industrial and community stability through the provision of employment in woods work and of raw material for the manufacture of forest products; and, finally, what definite areas of timber are to be offered for sale during the next 10 or 20 years (Wilkinson and Anderson 1985: 25).

The same report from 1928 described the range management plans:

> They analyze the grazing and related problems of each range unit, set up the management objectives, and specify the manner of use called for to attain the desired objective. They determine the class and numbers of stock that the range can carry, the grazing season, and the distribution necessary to utilize the forage evenly...They incorporate the knowledge obtained by research regarding the stage of development at which the plants on each range may be safely grazed, the measures necessary to allow depleted ranges to recuperate, the best methods of developing water, the best salting practices, successful means of eradicating poisonous plants, the control of livestock diseases and of range-destroying rodents, and like matters (Wilkinson and Anderson 1985: 25).

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